A COMPARATIVE STUDY OF PSYCHO-PHYSIOLOGICAL AND SPECIFIC HEALTH ABILITIES IN COMBAT SPORTS

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INTRODUCTION

CHAPTER-I

A **combat sport** is a competitive contact sport that usually involves one-on-one combat. In many combat sports, a contestant wins by scoring more points than the opponent or by disabling the opponent. Common combat sports include mixed martial arts, boxing, wrestling, fencing, savate, kickboxing, Muay Thai, Sanda, Tae Kwon Do, Capoeira, Brazilian Jiu-jitsu, HMB, Sambo, Kyokushin, and Kūdō, sometimes even Ninjutsu. Tradition styles of wrestling exist in most cultures; wrestling can be considered a cultural universal. Boxing contests date back to ancient Sumer in the 3rd millennium BCE and ancient Egypt *circa* 1350 BCE (Boxing". *Encyclopedia*). The ancient Olympic Games included several combat-related sports: armored foot races, boxing, wrestling, and pankration, which will be introduced in the Olympic Games of 648 BCE. In ancient China, combat sport appeared in the form of lei tai. It will be a no-holds barred combat sport that combined boxing and wrestling. There is evidence of similar combat sports in ancient Egypt, India and Japan. (Brownell, Susan, Elaine 1990).

Combat athletes usually fight one-on-one. Different sports involve different skill sets and moves. For example, boxing only allows punches, taekwondo largely involves kicks, grappling, such as both freestyle and Collegiate wrestling. Some combat sports involve the use of weapons and armor, such as fencing, kendo, and the new sport SCA Heavy Combat. Combat sports are generally more popular among men, both as athletes and as spectators. For many years, participation in combat sports will be practically exclusive to men; A study conducted by Greenwell, Hancock, Simmons and Thorn in 2015 revealed that combat sports had a largely male audience.

In combat sports, victory is obtained from blows, punches or attacks to the head to a point of physical injury that the opponent is unable to continue. Different forms of combat sport have different rules and regulations into the equipment competitors have to wear. In Amateur boxing seen at the Olympics, competitors are permitted to wear head guards and correctly weighted padded gloves, mouth guards

are optional and the canvas floor protection from a hard fall. In sports such as Taekwondo, competitors are permitted to wear a trunk protector, head guard, gloves, groin guard and shin and forearm pads. Physiological Efficiency recognized as an important component of health and it may be important for the performance of functional activities and quality of life (Maria et. al., 2003), Low Physiological Efficiency may result in high physical strain during the study period (Pongprapai, et. al. 1994). The physiological effects of sports performance related physical fitness components are wide ranging, and affect various body systems. As a modifiable component of energy expenditure, physical activity can affect energy balance. However, the total effects of sports performance related physical fitness components on total energy expenditure go beyond the sports performance related physical fitness components induced energy expenditure. Increases in resting metabolic rate and non-Sports related physical fitness or motor fitness activity thermo genesis are also seen. Furthermore, sports performance related physical fitness components can modify body composition favourably by decreasing fat mass and increasing lean mass. Sports performance related physical fitness components can reduce resting blood pressure and increase capacity to carry blood in the coronary arteries. Beneficial changes also occur in the lining of blood vessels which help direct the appropriate distribution of blood in the body. Sports related physical fitness or motor fitness and health related physical fitness may help to prevent fractures of different body segments among power lifter and weight lifter and reduce the risk of osteoporosis. Physically active can enhance functional capacity among young people, and can help to maintain the quality of life and independence.

A number of studies have shown that Sports related physical fitness or motor fitness may play a therapeutic role in addressing a number of psychological disorders. Studies also show that Sports related physical fitness or motor fitness has a positive influence to reduce depression, anxiety, stress. Physical self-worth and physical self-perception, including body image, has been linked to improved self-esteem. The evidence relating to health benefits of physical activity predominantly focuses on intra-personal factors such as, psychological, physical, physiological, cognitive and affective benefits. Sports related physical fitness or motor fitness which can also produce positive health effects in individuals and communities. Sports related physical fitness or motor fitness and health related physical fitness have long been used in the, Rehabilitation cure and treatment of communicable and non-

communicable diseases. Sports related physical fitness or motor fitness and health related physical fitness for individuals is a strong means for the prevention of diseases and for nations is a cost-effective means to improve public health across populations.

Physical fitness has a vital role in the life of human being from time immemorial. The development of the Societies, communities depends in the hands of the people, who are healthy and physically fit. Every individual should develop their fitness for a happiness and effective living. In order to get physical fitness one has to involve in Physical fitness. Physical fitness is essential for the enhancing of wholesome personality of an individuals which would depend upon the opportunities provided for universal development of the, physiological, psychological, physical, social and spiritual aspects. Hence a well-organized and properly administered Physical fitness and sports performance related physical fitness components for power lifter and weight lifter are very essential. Physical fitness and sports performance related physical fitness components throughout the ages has been acclaimed for health and recreation. It provided fun and enjoyment. It also provided youthful exuberance and the elderly care. Sports related physical fitness or motor fitness and physical fitness and movements are as old as human existence. It played numerous roles from struggle for existence to struggle for excellence. Low physical fitness may result in high physical strain during the performance of activities (Bruining et. al. 2007). As a consequence, activity levels may decrease due to fatigue and discomfort, exacerbating low physical fitness. The Physical fitness s are much better when you include another Sports related physical fitness or motor fitness that will focus on improving your strength, muscle development and endurance. It will make you less prone to injuries. When strength training and cardiovascular fitness plans are combined, one will also look and feel younger. Several studies had been done on physical fitness and motor fitness of sports person , but there is no study conducted on psycho-physiological and specific health abilities in combat sports have been done so far. This is possible only if appropriate research is carried out on on psycho-physiological and specific health abilities in combat sports.

Statement of the problem

“Examining the Psycho-physiological and Specific Health abilities in combat sports”

Objectives of the study :

The Primary and secondary objectives of the study are as:

Primary objective of the study will be determine the examining the psycho-physiological and specific health abilities in combat sports

The secondary objectives of the study are as.

1. To study the psycho- physiological abilities on power lifting, weight lifting and Judo players.
2. To study the specific health abilities on power lifting, weight lifting and Judo players.

Hypothesis of the study:

1. There would be statistically significant difference of psycho-physiological abilities on power lifting, weight lifting and Judo players.

2. There would be statistically significant difference of specific health abilities on power lifting, weight lifting and Judo players.

Delimitations of the Study:

1. The study will be delimited of the following psycho-physiological abilities are as
   a. Body Composition.
   b. Blood Pressure
   c. Vital Capacity
   d. Breathing efficiency
   e. Heart rate
   f. Respiratory rate
   g. Cardiovascular fitness
   h. Mental health

i. Aggressiveness

j. Stress

2. The study will be delimited of the following physiological variables are

a. Speed

b. Athletic power

b. Work power

c. Agility

d. Balance

e. Foot and hand reaction time.

Flexibility

8. The study will be delimited to 50 power lifting 50 Judo and 50 weight lifting players only.

Limitations:

1. Since the participant belonged to different level of physical performance hence the prior experience of the sample may be considered as a limitation to the study.
2. Since the participant belonged to different background this may be also considered as the limitation of the study.
3. There will be no control of research scholar on the diet of subject.
4. The effects of weather, condition will be considered as limitations.

Definitions and Explanation of important technical terms:

- **Psycho- Physiological Efficiency:**
- Ability to selected psychological and Physiological capacity of human body system.

Specific Fitness

The specific fitness defines as combination of selected health related physical Fitness and sports performance related Physical Fitness**.**

REVIEW OF RELATED LITERATURE

CHAPTER-II

The following Review of literature selected for this study are as:

Hill and Barton (2005) analysed outcomes from the 2004 Olympic Games of the men divisions in boxing, taekwondo, Greco-Roman wrestling, and freestyle wrestling and found that wearing a red outfit will be associated with a higher winning probability compared to wearing a blue outfit. Hill and Barton offered an explanation based on evolutionary psychology, arguing that red colour is a signal of male dominance in many animal species.

Rowe, Harris and Roberts (2005) proposed that this effect is not unique for red coloration. After analysing outcomes of men's judo contests in the 2004 Olympic Games, they found a significant winning bias for athletes wearing a blue outfit relative to those wearing a white outfit. They proposed that colour of the outfit might affect opponent's visibility which is crucial for performance.

Skelton et al. (1991) showed that high level of taekwondo training will be associated with less aggressiveness, Endresen and Olweus (2005) found contradictory results, questioning the positive effects of martial arts training.

Endresen and Olweus (2005) examined the relationship between participation in power or fight sports (boxing, wrestling, weight lifting, oriental martial arts) and violent and antisocial behaviour in young boys. Participation in these sports actually increased violent and antisocial behaviour.

Miller, Wagner, and Edwards (1982) focused on fearfulness. It would seem that this study did not contextualize martial arts as competitive sports. Investigating the psychological effects of practicing martial arts as a form of self-defense,

Miller et.al (1982) studied whether women enrolled in beginner and advanced judo-jujitsu classes in a mid-west American city were more fearful than women enrolled in fitness or crafts classes. The authors reasoned that "as women increasingly enter domains previously perceived as male dominated, it seems likely that at least some are doing so as a reaction to threat, and the coping methods subsequently utilized take

an added significance" (Miller et al., 1982, p. 341). In their survey, women in the beginner's judo-jujitsu group perceived the world as more threatening than women in the advanced judo-jujitsu group, fitness group or crafts group. As it will be only the beginner judo-jujitsu participants who exhibited significant fearfulness and bodily concern, the researchers suggested that the advanced group will be more successful in managing perceived environmental threat due to their sporting achievements. Miller and colleagues concluded that results obtained, support the contention that "certain characteristics are peculiar to women who seek out a particular physical activity" (p. 342), thus implicating fearfulness and bodily concerns to be "peculiar" to women who enroll in martial arts. Another topic that gathered research attention will be visual search activity in martial arts.

Ripoll, Kerlirzin, Stein, and Reine (1995) analyzed information processing, decision making, and visual search activity in French boxing. Six experts, six intermediate, and six novice athletes whose gender will be not indicated were asked to solve different boxing situations, in which a boxer, considered as an opponent, will be video-recorded and the image projected into a screen. The participants had to respond to the attacks of the opponent by manipulating a joystick. The visual search activity of the athletes will be recorded and analyzed, and results indicated that experts adopted a more efficient search pattern while they also focused on different display areas than novices.

Williams and Elliott (1999) examined the effects of cognitive anxiety on anticipation and visual search behavior, as well as the differences in anticipation and visual search strategy between expert and novice karatekas. Results indicated that there were no differences between groups in number of fixations, mean fixation duration, or total number of fixation locations per trial. However, increased search activity will be more pronounced in novices, with fixations moving from central to peripheral body locations.

Columbus and Rice (1998) attempted to shed some light on the dimensions by which American martial artists describe martial arts participation as a meaningful endeavour. Authors argued that even though Asian martial arts grow in popularity in North America, little is known about everyday experiences of the American practitioners that might influence participation, which might differ a lot from the traditional Asian values attributed to martial arts. Phenomenological analysis of

written narratives of karate, taekwondo, and tai chi practitioners revealed four contexts in which martial arts were considered as worthwhile activities for participants: criminal victimization, growth and discovery, life transition, and task performance. In each of the four contexts, martial arts participation will be experienced as valuable when it helped an individual's adaptation to everyday life circumstances. Moreover, each of these contexts revealed distinct and meaningful relations between participants' body/ self, others, feelings, situation outcome, and martial arts practice. Thus, authors suggested that benefits of martial arts training may transfer to everyday life situations.

Gernigon and Le Bars (2000) investigated whether achievement goal orientations (task and ego) of children and adult practitioners of judo and aikido might be affected by the type of martial art that is practiced (competitive: judo vs. non-competitive: aikido), the level of experience (beginner vs. experienced), and the gender of the athlete. Children practicing aikido proved to be generally more task-oriented than children practicing judo. Furthermore, in the children's group, experienced aikidokas were less ego-oriented than beginner aikidokas and experienced judokas, whereas experienced judokas were more ego-oriented than beginner judokas. Regarding the adult group, experienced aikidokas were both less task- and ego-oriented than beginner aikidokas and experienced judokas.

Ko, Kim, and Valacich (2010) examined motivation factors that influence an individual's participation in martial arts in order to provide leaders of the industry with meaningful managerial implications. These martial arts participants appeared to be highly motivated by growth-related motivation (e.g., value, development and actualization). Motivation of martial arts practitioners varied across types of martial arts disciplines, competition orientation, and past experiences.

CHAPTER III

METHODOLOGY

This chapter explained the methodological details used to implement the study. Specifically, presented the general perspective and context of the study, an overview of the participants and a description of the procedures used in data collection, and an explanation of data analysis.

Demographic Information

The data will be collected through respondents in the form of different tests. The demographic information about, age, height, weight etc. will be obtained before seeking training fromPower lifting , Judo and weight lifting players .

Sampling Method:

Purposive sampling method will be used, as the researcher selectedPower lifting , Judo and weight lifting players with a specific purpose.

Target of population

Two groups will be targeted, Power lifting players judo and weight lifting player. 40 Power lifting players and 40Power lifting , Judo and weight lifting players selected for this present study. All data collected in Telangana state.

Research design:

This study involves a cross sectional, comparative study of Power lifting , Judo and weight lifting player. Since no experimental groups will be taken by the investigator and there will be no control group so this study will be conducted in a descriptive research design.

Tools of the study:

Stopwatches, still tape, electronic blood pressure device, weighing machine, stadia-meter, Spiro-meter, and health outcome questionnaires tools will be used for data collection.

Assessment of physiology variable

The following physiology variable will be selected as follow.

1) Resting Heart rate
2) Respiratory rate
3) Vital capacity
4) Blood Pressure

Resting Heart Rate: -

Resting heart rate of each subject will be recorded the subject will be instructed to remain lying on their bed to record the heart rate, heart rate will be recorded by the palpation of redial artery per minute. The score will express in number of pulse rate per minute.

Respiratory Rate:-

The respiratory rate of each subject will be recorded before recording Respiratory rate the subject will be instructed to remain lying on their bed in supine lying position. The tester will then record rate of respiration in units per minute by carefully watching the movement of the subject abdominal. Total number of respiratory movement per minute will be finally recorded.

Vital Capacity :-

Dry Spirometer will be used measure vital capacity. The Spiro-meter will be brought in to zero position. The subject performs maximum inspiration and after clipping the nose, the air will be blown out as intensively as possible in the mouth piece. The amount of expired air will red directly from the calibrated scale & that will be the score of vital capacity and will be recorded in litters.

Assessment of Psychological Variables :-

1) Academic Stress
2) Mental health

Academic Stress: For the student's academic stress, Gadzella's (1991) Students-life Stress Inventory will be used. It will compose of 51 items to be divided into two major sections: types of stressors and reactions to stressors. The types of stressors section will include both personal and academic stressors and is divided into the following five categories: frustrations,

conflicts, pressures, changes, and self-imposed. The reactions to stressors section will comprise of the following four categories: physiological, emotional, behavioral, and cognitive. Participants respond to a five-point scale using 1 = never, 2 = seldom, 3 = occasionally, 4 = often, and 5 = most of the time.

Mental health questionnaire.

Mental health

For the present study, Mental health will be measured by the using General Health Questionnaire (GHQ -12) .The General Health Questionnaire (GHQ) is a measure of current mental health and since its development by Goldberg in the 1970s it has been extensively used in different settings and different cultures .The 12-item GHQ-12 comprises six ' positive ' and six 'negative' items . Positive items included 'Have you recently felt capable of making decisions about things ?', while negative items included 'Have you recently felt constantly under strain? ' Itemswere classified in this way according to wording, with positively worded items having responses 'Better than usual', 'Same as usual', 'Less than usual' and 'Much less than usual '. Responsesto negatively worded items are 'Not at all ', 'No more than usual', 'Rather more than usual' and 'Much more than usual'. Questions 1, 3, 4, 7, 8 and 12 as positively worded items. The remainder are negatively worded. Responses will be coded using an un weightedfour-point Likert scale (0, 1, 2, 3). Positively worded items will later rescored so that a high score will indicative of endorsement of these items (e.g. 'better than usual '). Higher scores on negative items indicate greater distress and or difficulty. The mental health questionnaires filled two times like before and after yogic practices.

Specific Fitness Assessment

The following tests will be taken for measuring physical fitness of selected Power lifting players, Judo and weight lifting players.

Cardiovascular Endurance:

This component will be evaluated by using 12 minute Run & Walk Test.

The 12 minute run test requires the person being tested to run or walk as far as possible in a 12 minute period. The objective of the test is to measure the maximum distance covered by the individual during the 12 minute period and is usually carried out on a running track by placing cones at various distances to enable measuring of the distance. A stopwatch is required for ensuring that the individual runs for the correct amount of time. When time is over, at that time investigator gives signal to stop. Subject will be stands right there where he stops. Then investigator measures the crossed distance by the subject.

Muscular Endurance:

This component will be evaluated by using 1 minute Bent Knee Sit Up test. Abdominal muscular endurance will be measured by performing the 1-minute bent knee sit-up test. Subject Lied on his back with knees bent at a 90-degree angle. His feet will be flat on the floor. Subject interlocked his fingers behind his head, and then slowly rises to sitting position and touched his elbows to knees. Now subject let down his body back to the starting position, and repeated the process as many times as possible for the subject within one minute.

MUSCULAR STRENGTH:

This component will be measured by using Grip Dynamometer & Kraus Weber Strength Test.

Grip Dynamometer Strength Test:

The muscle groups in forearm involve many extensor and flexor muscles. These two groups work together to provide grip strength, which is essential to performing everyday tasks and many sporting activities. The most common way to measure grip strength is with a handheld dynamometer. A dynamometer is a spring-loaded squeeze device that measures force and assesses muscle group strength. Procedure: The subject used his right hand and applied as much grip pressure as possible on the dynamometer by squeezing the handle together. The maximum reading is recorded by the assistant. The test is repeated three times using the same right hand. The highest

recorded value is used to assess the grip strength. Scoring:The highest recorded values for each hand are averaged together to get the total score. This score is then compared on a scale to determine your rating. The ratings are excellent, very good, above average, average, below average, poor and very poor.

Kraus Weber Strength Test:

This test is made up by combining six physical activities or tests. These are as follows: Test No. 1: The subject lied flat on back with his hands behind the neck, assistance held his feet on the ground, and performed one sit-up.

Test No. 2: The subject lied down with his knees will be bent, with his ankles close to the buttocks and performed one sit-up.

Test No. 3: The subject lied flat on back with hands behind neck. Legs straightly lifted 10 inches off the floor. Subject holds his position for 10 seconds.

Test No. 4: The subject lied on stomach with a pillow under his lower abdomen and groin. Assistant holds his feet down. Subject lifted head, shoulders, and chest off the floor and holds for 10 seconds.

Test No. 5: The subject's position will be the same, but the assistant holds the chest down, with straight knees, lift legs off floor and hold for 10 seconds.

Test No. 6: The subject stands erect. Subject keeps knees straight. Bend over slowly and touch the floor with the fingertips. Hold this position for 3 seconds.

Body Composition will be evaluated by using Body Mass Index (BMI).

Body Mass Index is calculated from body mass (M) and height (H). BMI = M / (H x H), where M = body mass in kilograms and H = height in meters. The higher score of the Body Mass Index usually indicates higher levels of body fat. **Scoring:** Use the BMI table to determine BMI rating. The rating scale is the same for males and females. You can also use the reverse lookup BMI table for determining your ideal weight based on height.

Flexibility:

This component will be measured by using Bend & Reach and Sit & Reach Test.

Bend & reach Test:

The main aim of this test is to evaluate the flexibility of the subject. For conducting the test a stable wooden box 40 Cm.'s. high on one side is requires. Procedure: Subject stands bare foot on the box with both feet together with toes in line with the edge of the box. From this position he bends forward and downward while keeping his knees straight. He extends his hands along the scale as down as possible. Both the hands should be parallel. At a maximum reach he holds the position for about 2 seconds. Scoring: The result is read from the scale. Two attempts are given at recovery rest of 30 seconds. In case a subject is not able to extend his hands even to the level of the box then the distance from the 0 Cm's. Mark to the tip of middle finger should be measured with a scale and recorded as negative score.

Sit & reach Test:

The main aim of this test is to evaluate the flexibility of the subject. For conducting the test a stable wooden box 40 Cm's. high on one side is requires. Procedure: Subject sits bare foot with the box with both feet together with toes in line with the edge of the box. From this position he bends forward and while keeping his knees straight. He extends his hands along the scale as forward as possible. Both the hands should be parallel. At a maximum reach he holds the position for about 2 seconds. Scoring: The result is read from the scale. Two attempts are given at recovery rest of 30 seconds. In case a subject is not able to extend his hands even to the level of the box then the distance from the 0 Cm's. Mark to the tip of middle finger should be measured with a scale and recorded as negative score.

Ethical Consideration:

In this research study the researcher Follow to ethical guidelines, principles, and standards for studies conducted with human beings .The study will be include safeguards for protecting humans,

The inclusion criteria are:

1. The participant will be agreeing to participate in the study.
2. The participants must be competitive young adults in their aged range will be 18 to 35 years.
3. The participants will be not rotating through other health facility at the time of study.

The exclusion criteria are:

1. The participants advised not to participate if under any physiological or psychological disorders.
2. Inability to obtain the questionnaire of the respondent.
3. Presence of chronic medical conditions such as asthma, heart disease or any other condition and
4. Participants not less than aged of 18 and more than 35 years.

Sports performance related physical fitness test

- Speed Test:
- Power Test:
- Agility Test:
- Balance Test:
- Reaction time test

The following test will taken from students

A)SPEED: This test measured by using 50 Yard Dash Run.

50 yard Dash: The purpose of the test is to measure speed. The test is suitable for both and girls.

Equipments: Area of desired length preferably on an athletic track playground or football field with a marked starting line and a finish line, two stopwatches.

Test Administration: The tester should give in advance, instructions to a group of 10-15 subjects as follows " you are required to take any position behind the starting line. Wait for the starting signal. On receiving the command Go, you are to start running as fast as possible till you reach the finish line. Warm up just before the sprint test. After then warm up, subjects preferably in pairs, are asked to take starting position behind the starting line and wait for the signal 'Go'. A separate helper with a stopwatch is required to watch each subject at the finish line. The tester gives commands Ready, Steady, Go, so that these are audible easily to subjects at the start line and the timers at the finish line. At the command Go, the timers start their respective stopwatches and the subjects start their sprints. As soon as the subjects crosses The time accurate up to 0.01 second. Only one correct trial is permitted. The subject is asked to restart the sprint in case he start before the word go or fails to start quickly at the command Go, Sometimes a gunshot may be stopwatches by the timers and sprints by the subjects especially when the sprint is for more than 40 yard.

Scoring: The time elapsed from the start to the instant, subject crosses the finish line, is the score expressed usually up to hundredth of a second.

POWER: power measured by two types standing Broad Jump & Vertical jump

A)**Athletic Power**: Athletic power measured by the Standing Broad Jump.

Standing Broad Jump: This test measures the power of legs in jumping horizontal distance and may be applied to children of both sexes aged seven years above.

Equipment: Floor Mat or long jump pit may be used, measuring tape, marking tape.

Test Administration: A demonstration of the standing Broad jump is given to a group of Subjects to be tested. The Subject is then asked to stand behind the starting line with the feet parallel to each other. He is instructed to jump as farthest as possible by bending knees and swinging arms to take off for the broad jump in the forward direction. The subject is given three trials.

Scoring: The distance between the starting line and the nearest point of landing provides the score of the test. The best trial is used as the final score of the test.

B) Work Power : work power test measured by the Vertical Power Jump.

Vertical Jump: This test measures the power of legs in jumping vertically and can be applied to children of both sexes aged nine years and above.

Equipment: A Black board of 4.5 feet x 2 feet painted with green and red lines ,one inch apart and one feet apart respectively (The board is fixed firmly to a wall, preferably 6 a weighing scale (optional). In case, the blackboard is not available, a smooth and plain wall may be painted black for use in this test.

Test Administration: In the beginning a demonstration of the vertical jump, is given to a group of five to ten subject is asked to stand erect facing the board . His dominant hand's fingertips are marked with chalk powder and the subject is asked to raise the marked fingertips to a maximum height on the blackboard without lifting the heels so as to mark his maximum reach point. The fingertips are rechalked. With the chalked hand side towards the wall, a vertical jump is to be performed by the subject to make another mark at the maximal height of the jump. The subject is not allowed to run or hop. However, the subject is properly

instructed to take a good jump by bending the knees and swinging the arms. The subject may be given three to five trials at his will and the best performance is considered.

Scoring: The maximum distance between the reaching height and the jumping height provides the score the test. However, to get the power in foot-pound units, the above distance is multiplied by the subject's body weight. But majority of the testers routinely use directly the distance jumped irrespective of body weight as the score of the test.

AGILITY: Agility measured by administrating SEMO agility test.

SEMO Agility Test : This test is used to measure agility ability of the subject during forward, sideward and backward maneuvering movements. The test is suitable for both boys and girls aged 12 years and above.

Equipments: A stopwatch, four plastic cons 9"x9" base having 12" height and a basketball court area measuring 12'x19'.

Test Area: A smooth plane area of 12'x19' size is marked. This marked area must have adequate running space around it. It is easier to mark the test area in a basketball court starting form the free throw line to the end line of the court. Four cones are placed at each inner angle of the 12'x19' rectangle.

Test Administration: After a demonstration given by a trained helper, the tester asks the subject to stand just outside the marked rectangle at the starting point. With his back towards the free throw line, the subject waits for the signal ready, go at the world 'Go' the tester starts the stopwatch while the subject start side stepping to his right has his faster speed until he reches outer corner of the3 second cone from where the subject start back pedaling (ruining backward) from the outer corner of the second cone I just outside the 19' marked line. As soon as the subject reaches the cone no. I he is to take a side turn and again run back pedaling to reach the inner corner of cone no.4 to no.2 where he is to perform a side step to his left to reach the finish line as rapidly as possible with his best

efforts. As soon as he steps outside the finish line with his both feet, the tester stops the stopwatch.

Scoring: Each subject is given two trials and time of each trial is noted accurate up to 0.1 second. The lesser value of the time out of the two trial is the score of the subject.

STATIC BALANCE: The static balance measured by using Brass Stick Test.

BASS Stick Test: These tests are of two types namely Bass Stick Test (crosswise).

This test is used to measure the static balance on the subject by making the body stable on a narrow surface while standing on the ball of the foot. The test is suitable for both sexes aged 10 years and above.

Equipment: A stopwatch, one inch high and 12 inches long stick and an adhesive tape.

Test Administration: The tester gives a practical demonstration either himself or through a trained helper to a group of 10 to 15 subjects by show to stand crosswise on the stick upon a given signal. After the demonstration that subject is asked to place the ball of the right foot crosswise on the stick which is tightly secured to the floor with the help of adhesive tape. The tester then announces ready, Steady, and 'Start'! On the signal 'Start', the performer lifts the left foot the from the floor and raises the heel of the right foot from the ground so as to balance his/her body on the ball of the foot placed crosswise on the stick for as possible up to a maximum of 60 second, on the signal 'Start' the timer starts the stopwatch which is stopped when one of the following event happens:-

-The subject touches the floor either with his right heel or toes.

-The subject looses balance and happens to touch the floor with the free foot (left foot in this trail).

- 60 seconds are over when the test is officially announced as completed.

Each subject is required to perform the above test for six times, three times on right foot and three times on left foot alternating each trial with left after right foot.

Scoring: The score is given by the sum of the times in seconds recorded during all the six trials.

REACTION TIME: Reaction time measured by administrating the Nelson Hand and Foot Reaction - Time test.

a)Nelson Hand Reaction Time: This test is used measure the reaction time of hand movement in response to a visual stimulus. This test is suitable for both boys and girls aged five years and above.

Equipment: Nelson reaction time scale, table and chair or desk chair.

Test Administration: After giving a practical demonstration to a group of 10 to 15 subjects, the tester asks a subject to sit in the chair with his fore-arm and hand resting on the table (or desk top)in such a way that the tips of thumb and index finger are in a horizontal position. Now the tester holds the stick of the timer from its top edge in such a way that the lower edge of the stick timer hangs between the subject's thumb and index finger so that the marker base line (not the edge) of the stick timer is in a same horizontal position in which is the upper surface of the subject's thumb and fore-finger. The tester has to assure that the subject does not touch the hanging stick timer. New he asks the subject to look at the hanging stick timer. Now he asks the subject to look the concentration zone that is the black shaded area between the 0.120 and 0.130 seconds lines. The subject is instructed to catch the stick by pinching together his thumb and index finger as soon as the stick timer is released by the tester. The subject is also to be instructed strictly neither to look at the tester's hand nor to move his hand up or down while attempting to catch the falling stick timer. Before leaving the stick, the tester gives a preparatory command of 'Ready'. Each subject is given twenty trials.

Scoring: Time is read from the stick just above the thumb when the subject catches the falling stick timer. Out of 20 trials, results of five fastest and five slowest trials, are discarded and the average of the middle 10 trails gives the score of this test.

b) Nelson Foot Reaction Time: This test is used to measure thespeed of reaction time of the foot in response to a visual stimulus. The test is satisfactory for both boys and girls aged 5 years and above.

Equipment: Nelson reaction timer, table or bench and wall space.

Test Administration: The subject is asked to sit on a table which is about one inch away from the wall with his shoe off. The subject positions his foot so that the ball of the foot is held about one inch from the wall with the heel resting on the table top about two inches from the table edge. The tester holds the reaction timer stick near the wall so that it hangs between the wall and the subject's foot with the base line of the timer opposite to the end of the big toe. The Subject is asked to look at the concentration zone and to react as soon as the timer is dropped, by pressing the timer stick against thewall with the ball of the subject's foot.Twenty trials are given in this test.

Scoring: The reaction time of each trial is recorded from the line just above the end of the big toe when the foot is pressing the stick to the wall.

Statistical technique:-

The statistical computation of data of the present study is used by using SPSS package in the computer. The result computed also crosschecked by using following statistical variables. Mean standard deviation, T-test. The level of significance will be set-up at 0.05 level of confidence to test the hypothesis.

TentativeChapterization:

The present study will be divided in the following chapters:

Chapter - 1

The Chapter One outlines the background of the problem under consideration, its significance in the present scenario, the scope of the study, objectives the research intends to achieve and hypotheses to be established. This chapters also includes the definition and explanation of important technical terms related to the study.

Chapter - 2

The Chapter Two undertakes the review of literature related to the present topic of study and tries to define the problem under consideration in a proper way. Firstly, the chapter defines important terms and concepts in a proper way to give readers an understanding of various terms in the research report. Secondly, it critically reviews the gender-based violence. The chapter identifies the research gaps between the problem under consideration and the available literature on the issues and strongly recommends further exploration on the problem.

Chapter - 3

This includes a detailed methodology of conducting research on the issue under consideration and various components of research design such as the universe, the sample, types of data, tools of data collection, technique of data collection, ethical consideration and methods use to analyse data.

Chapter - 4

The Chapter includes the interpretation of data and results of the study. The results of the study will be illustrated through suitable table and figure. This chapter will also include the discussion of findings.

Chapter - 5

The Chapter five summarizes the findings of the study and conclusions derived thereof. The research has also made some valuable suggestions for further research.

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